
**A BUSINESS MODEL CANVAS
FOR A ONE-STOP-SHOP**

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Research Report Serie

A business model canvas for a one-stop-shop

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A BUSINESS MODEL CANVAS FOR A ONE-STOP- SHOP

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1. INTRODUCTION

The building sector accounts for high CO₂ emissions (40%) and energy consumption (36%) in the EU (Navigant & Ipsos Belgium, 2019). Beyond that, the building sector is also responsible for a large amount of PM₁₀ and PM_{2.5} emissions (39%, and 56%, EEA, 2018) within urban areas. The energy renovation of existing building stock – 75% of buildings in Europe does not achieve sufficient energy performance (Laffont-Eloire et al., 2020) – is crucial to reduce energy consumption and CO₂ emission, and it plays a crucial role in achieving the European decarbonising targets. Although many policies and measures have been introduced across Europe, the building renovation rate remains too low (0.4-1.2% per year, Navigant & Ipsos Belgium, 2019). The one-stop-shop concept is raising in significance for promoting energy building renovation. A One-Stop-Shop (OSS) is a place – physical, virtual, or both – where customers can obtain multiple products and services at one single point (Reid & Wettenhall 2015; Howard, 2017). The aim is to simplify the energy renovation processes, motivate and support homeowners, increase the quality of works, and reduce the gap between the supply and demand sides. It also increases the opportunities to create new businesses for market players, so providing advantages to both sides of the chain, homeowners and suppliers. The OSS concept has been advocated by the European Commission through the Directive 2018/844/EU (EPBD), the Directive 2018/2002/EU on energy efficiency (EED), and more recently throughout the strategy called “Renovation Wave for Europe – Greening our buildings, creating jobs, improving lives” (COM(2020)662). Furthermore, the 2021-2027 Multiannual Financial Framework (Council Regulation (EU) 2020/2093) and the Next Generation EU recovery instrument (Council Regulation (EU) 2020/2094) will strongly support in next years building renovation process and the achievement of the Renovation Wave goal of doubling the annual energy renovation rate by 2030. The time and conditions seem favourable for the large-scale implementation of the OSS concept in the EU, with the aim to innovate the business models involved in the home renovation services delivery.

PadovaFIT EXPANDED aims at creating and piloting a One-Stop-Shop in the Padova Municipality (IT). The knowledge produced will be shared with the city of Timisoara (RO) which will benefit from the work done in Italy for launching and managing an OSS itself. Finally, the Bulgarian Energy Agency of Plovdiv will support the metropolitan areas of Vidin and Smolyan to take the example coming from Padova to prepare the conditions for the launching of a sound One-Stop-Shop in Bulgaria. The project brings together a strong consortium of 8 partners coming from four EU member states. The consortium is coordinated by the Municipality of Padova supported by Università Commerciale Luigi Bocconi, SINLOC, SOGESCA, Forum per la Finanza Sostenibile and Climate Alliance, a European network of local authorities for sustainability.

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This report has two main objectives: i. to identify and describe the main OSS Business Models (BM) existing in Europe; and ii. to orient local partners and stakeholders in designing suitable OSS BMs in their target areas.

The business model (BM)¹ can be described as the “architecture of a business” (Ballon, 2007) and it aims to explain how a firm creates, delivers and captures value (Osterwalder and Pigneur, 2010). In literature, different ways to describe BMs exist. The Business Model Canvas (Osterwalder et al, 2005) has been selected for its capacity to explain the business models in a more complete and integrated way. It is based on nine building blocks: 1) customers, 2) value proposition, 3) channels, 4) customer relationships, 5) revenues, 6) key resources, 7) key activities, 8) key partners, and 9) costs.

For the OSS BM analysis, 29 OSS initiatives in the EU have been considered looking at their BMs. Through the analysis recurring patterns emerged. These allow the identification of three BM archetypes and seven sub-categories, which describe how different types of OSSs create and deliver value within the energy home renovation market. Understanding the characteristics, benefits, impacts and weaknesses of such theoretical models help to guide local partners and stakeholders in designing their OSS. Indeed, local partners can use the archetypes to discuss which OSS model they would like to establish, and which model can better fit their local need and conditions.

The report is structured as follows:

- Section 2 describes the OSS BM archetypes that emerged from the analysis conducted over 29 OSS initiatives in the EU. It aims to provide useful inputs to PadovaFIT Expanded partners for the design of suitable OSS BMs.
- Section 3 presents the methodology adopted to co-design the OSS BMs in the target areas.
- Section 4 shows the main results coming from the co-design process developed in each target area. The results will be further examined and discussed in the next deliverable 2.5 in order to better define the OSS BMs and the Business Plans.

¹The Business Model should be not confused with the Business plan. The Business plan is a roadmap for a firm, which describes in detail how a business model works and achieves the goals (Gruber, 2007). The business plan evaluates the current situation of the company and presents its vision for the future, through the prediction of expected situation after the development of the business (Honig, Karlsson, 2004). The business plan is also a useful tool for attracting investment before the new business establishment, and for keeping the company focused on the targets. Ideally, the plan is reviewed and updated periodically to see if goals have been met or have changed and evolved.

2. ONE-STOP-SHOP BUSINESS MODEL ARCHETYPES

Starting from literature (Mahapatra et al, 2012; CITYNVEST project, 2018; Innovate project, 2018; Bertoldi and Boza-Kiss, 2018; Cicmanova et al, 2020; Laffont-Eloire et al, 2020) and desk research on OSS initiatives, 29 OSS experiences already implemented and running in Europe have been identified. Per each OSS, a Business Model Canvas has been developed² following the Osterwalder et al. (2005) framework. The Business Model Canvas is a strategic management tool that allows to design and visualize a business idea or concept. It counts of 9 analysis blocks: 1) customers, 2) value proposition, 3) channels, 4) customer relationships, 5) revenues, 6) key resources, 7) key activities, 8) key partners, and 9) costs (Figure 1).

² Information about the OSS initiatives comes from literature review and communication materials (websites, promotion materials, newsletters and other publications) provided directly from the OSSs.

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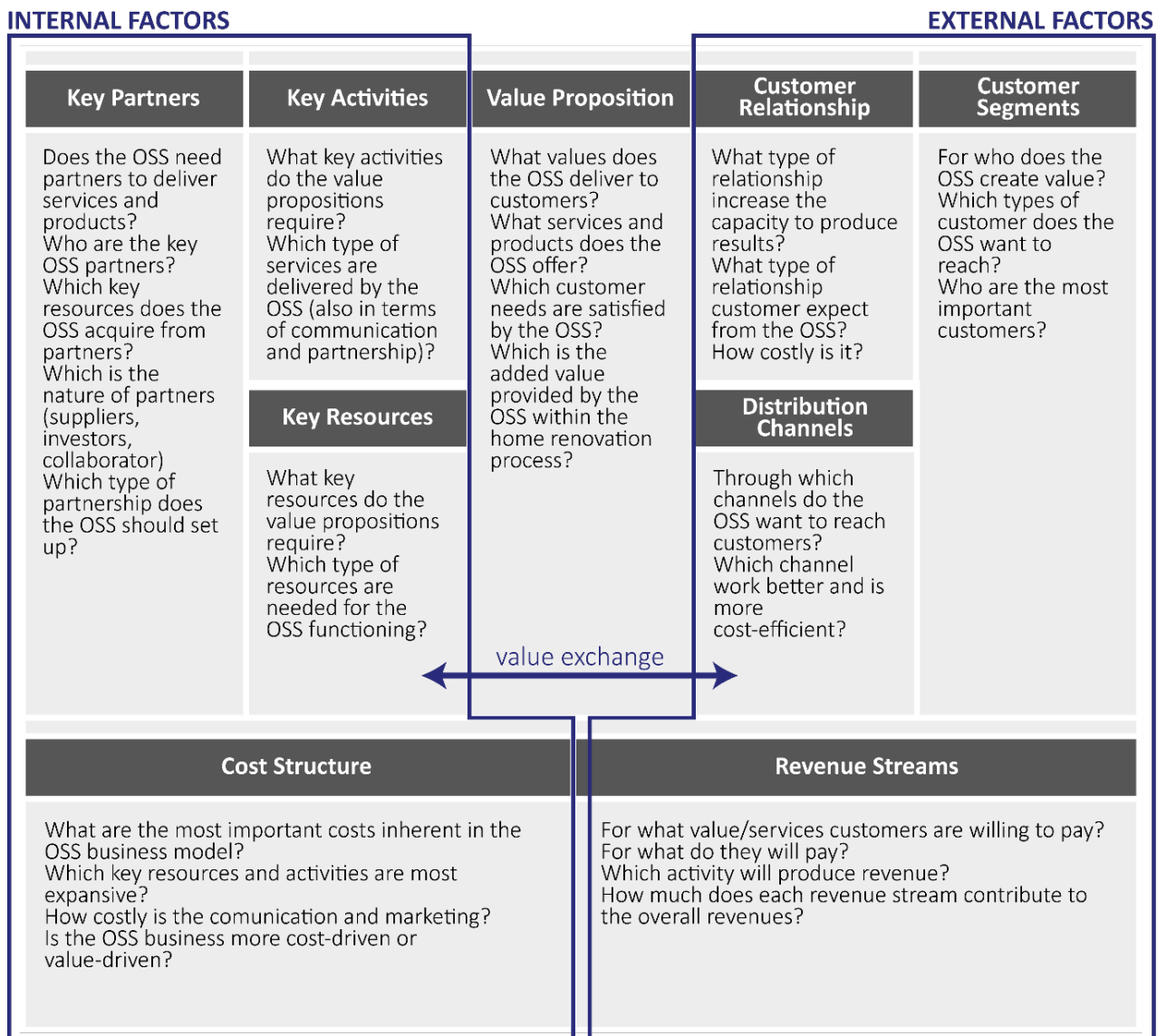


Figure 1 Business model Canvas (Osterwalder et al., 2005). The right side of the canvas focuses on the customer or the market (external factors that are not under the firm control) while the left side of the canvas focuses on the business (internal factors that are mostly under the firm control). In the middle, the value propositions represent the exchange of value between the business and customers.

The main goal of the OSS BMs analysis is to find out recurring characteristics and patterns, which can explain the OSSs functioning, structure, services and revenue schemes. This allows defining BM archetypes and sub-categories, which represent theoretical frameworks useful to describe a set of recurring mechanisms that characterise the functioning of different OSS models.

Three OSS BM archetypes emerged from the analysis: 1. The Facilitation model; 2. the Coordination model; and 3. the Development model. The parameters which mostly influence and shape the three BM archetypes are the value proposition, the services provided (key activities), the partnership management (key partners), and the revenue stream.

BM archetypes			
BM parameters	Facilitation Model	Coordination Model	Development Model
Value proposition	<p>Inform and motivate building owners, facilitating interest and information access.</p>	<p>Coordination of projects and partners,</p> <p>Cooperative-based solutions,</p> <p>Quality guarantee - quality controls of partners/supplier.</p>	<p>Control over the whole renovation journey,</p> <p>Full responsibility – one point of contact and one point of payment,</p> <p>Quality guarantee and monitoring of savings.</p>
Services	<p>Technical advising (mostly through online tools),</p> <p>Energy audit (optional),</p> <p>Intermediary services to suppliers (optional),</p> <p>Financial products (optional).</p>	<p>Technical-Financial advising,</p> <p>Multi-stakeholder coordination,</p> <p>Project management,</p> <p>Monitoring and follow-up</p> <p>Stakeholder training (certification),</p> <p>Financial products (optional).</p>	<p>Full services - tailor-made solutions: consulting, energy audit, design, project management, renovation work, products supply (optional), quality control and commissioning, follow-up, financing (optional).</p>
Partnership	<p>No-fixed or trusted partners,</p> <p>Network of suppliers (in the case of intermediary services)</p>	<p>Fixed/Certified partners,</p> <p>Trustworthy partnerships with local actors.</p>	<p>No-fixed partners,</p> <p>Subcontracting.</p>
Revenue stream	<p>Mostly no revenue (only online tool),</p> <p>Service fees – fixed price (e.g., for energy audit),</p> <p>Interest rate (for financing services).</p>	<p>Fixed service fee for advising services,</p> <p>Fixed fee for the coordination/management services,</p> <p>Fixed fee for training courses (optional).</p>	<p>Fixed service fee for advising services,</p> <p>Financing schemes more common:</p> <p>On-bill financing scheme, Energy performance contract (EPC), Property assessed clean energy financing, Interest rate</p>

Table 1 Key parameters defining and shaping the 3 OSS BM archetypes.

Within the BM archetypes, the OSS initiatives can be further categorized into sub-categories. The BM sub-categories are characterised by differences in three factors: services, partnership management, revenue stream. Seven sub-categories have been identified: 3 for the Facilitation model, 2 for the Coordination model and 2 for the Development model, as shown in Figure 2.

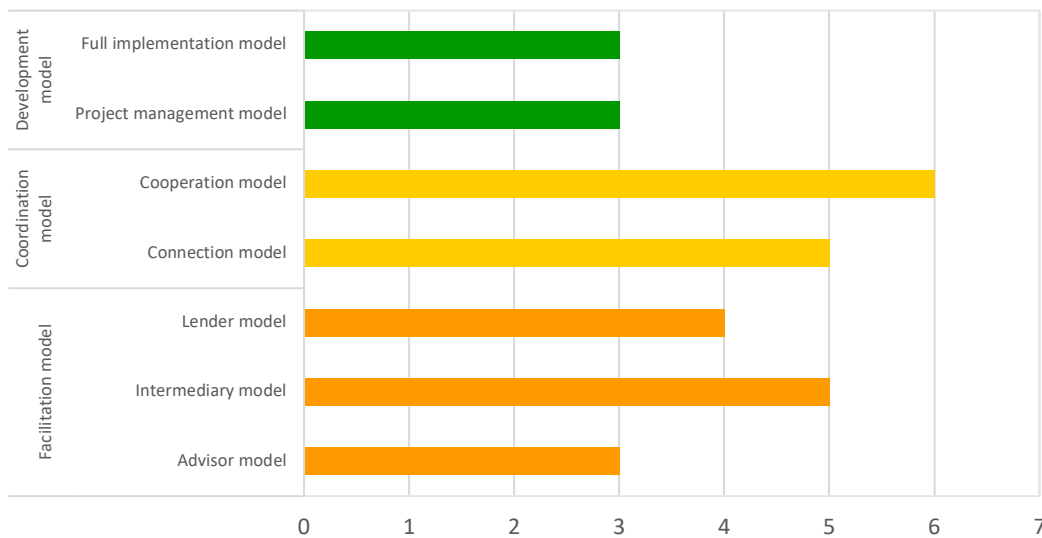


Figure 2 Shared BM subcategories by archetypes. The diagram shows the number of OSS initiatives belonging to each BM archetype and sub-category.

OSS BM archetypes and subcategories are described in the following sections, with the aim to highlight the main peculiarities and the differences between them, along with the advantages and disadvantages of each one. This provides local stakeholders with information about the main goal of each archetype, the main services provided, the relationship with external firms, the revenue streams and the impacts on the renovation market.

2.1. Facilitation model

The “Facilitation” model entails light support in the form of free of charge advice, either at a physical office and/or online, which is set up and whose operational costs are covered by the OSS (Figure 3). This archetype aims at raising awareness of the benefits of energy retrofits and simplify the home renovation process, through facilitating knowledge access, motivating homeowners, providing support regarding the most feasible retrofit solutions (both technical and financial), and promoting services offered by other stakeholders. This OSS model usually operates at the “orientation stage” of the home renovation process (Cicmanova et al, 2020). It provides technical assistance, gives advice for acquiring the appropriate finance (supporting administrative procedures for public grants or incentives), and provides a list of existing suppliers. This model can attract customers more easily thanks to its free of charge services, and the ease of access to such services. Among the advantages of this model, the main ones are the ease and relatively moderate costs to be set up, and its ability to share knowledge and raise awareness of different actors, both suppliers and customers (Table 1).

HIGHLIGHTS

This model provides light support mainly at the orientation phase of the home renovation process. It aims to reduce the information gap and raise the shared awareness. Costs are mainly covered by the OSS itself and services are available for free. Fixed and permanent partners are not needed for the service delivery.

However, the services offered are very limited, and homeowners should contact and meet different actors in different places, such as the bank and suppliers, and then coordinate them, which represent a time-consuming and complex duty for customers. Indeed, customers may still decide not to implement energy retrofit despite requesting advice from the OSS, due to the effort required to carry on by themselves all activities needed. This model makes it difficult to reach ambitious energy and climate objectives since it does not offer guarantee or monitoring services on energy savings and energy efficiency achievements. Moreover, low-income households who have no way to get access to financial support are very unlikely to take advantage of this service.

FACILITATION MODEL

Key Partners	Key Activities	Value Proposition	Customer Relationship	Customer Segments
<p>NO FIXED PARTNERS</p> <ul style="list-style-type: none"> List of suppliers Energy audit providers Financial institutions 	<p>INFORMING - SUPPORTING</p> <p>Technical-Financial advising/assistance Energy audit (optional) Intermediary services (optional) Financial products (optional)</p>	<p>MAKE THE HOME RENOVATION EASIER- PROCESS SIMPLIFICATION</p> <p>AWARENESS RAISING</p> <ul style="list-style-type: none"> Provide non-partial, neutral advice (Technical/ Financial advices) Reduce information/knowledge gap Intermediary point of contact for suppliers Easy access to financing (optional) 	<p>Online (mostly)- Selfservice relationship (online Tool)</p> <p>Personal assistance (optional, mainly provided by suppliers)</p>	<p>Multi-sided market</p> <ul style="list-style-type: none"> Homeowners (users) Suppliers (intermediary services)
	<p>Key Resources</p> <ul style="list-style-type: none"> Human Physical (equipment, offices) Online platform- software Financial (for the financial products provider option) 		<p>Distribution Channels</p> <p>Online (website) Help desk Local events</p>	
<p>Cost Structure</p> <p>VALUE-DRIVEN</p> <ul style="list-style-type: none"> Development of online platform + maintenance Employees Physical Office (optional) High initial costs (revolving funds set up) for the provider of the financial products 		<p>Revenue Streams</p> <p>There are many options:</p> <ol style="list-style-type: none"> No revenues (only online tool) Subscription fee (web tool - fixed price) Service fee (for energy audits- fixed price) Brokerage fee (for intermediary services) Courses fee/Labelling fee (fixed prices) Recurring revenue (interest rate) for the provider of the financial products 		

Figure 3 Facilitation model - BM canvas

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> • <i>Low initial costs.</i> • <i>Low services costs for customers.</i> • <i>Simplify the home renovation process, supporting both homeowners and suppliers.</i> • <i>Reduction of information barriers.</i> • <i>Sharing awareness among homeowners and suppliers.</i> • <i>Standard services and fixed prices.</i> • <i>Easy management.</i> 	<ul style="list-style-type: none"> • <i>Low-quality guarantee.</i> • <i>Low control of energy efficiency achievement and energy savings.</i> • <i>Low control over the whole renovation process. It focuses (mainly) on the starting phases of the home renovation: financial and technical advising, inspections, support in applying for grants.</i> • <i>Homeowners need to interface with multi actors.</i> • <i>Multi contracts. Energy audits, project design, financial services, monitoring of savings are separate.</i> • <i>No fixed partners.</i>

Table 2 Facilitation model advantages and disadvantages

Among the OSS initiatives referring to this BM archetype, three BM subcategories emerge: the Advisor model; the Intermediary model; and the Lender model (Figure 4).

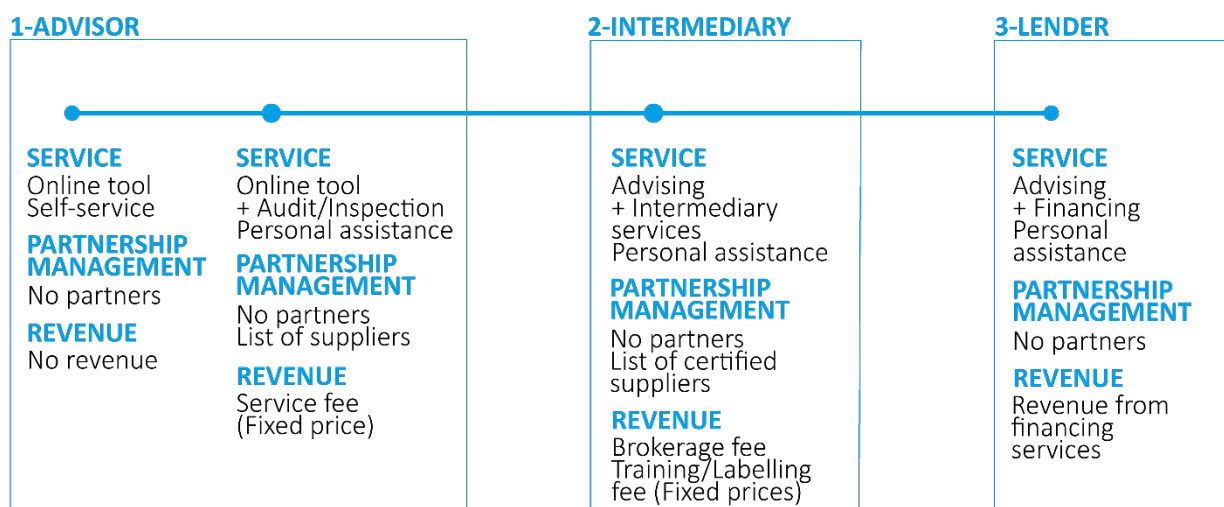


Figure 4 Facilitation model - Sub-categories. In these 3 BM subcategories, the OSS does not cooperate with external companies. It only provides customers with a list of suppliers, with whom the OSS does not establish a trustworthy and continuative partnership. The revenue stream goes from no revenues (only informative online tool) to the interest rate for financial and co-financial products.

1. ADVISOR MODEL

In the first subcategory, the OSS provides only a free online platform that customers can use to collect information and self-plan their home retrofitting. The online tool allows homeowners to analyse the home energy performance using data provided by them (bottom-up approach) or through public dataset (top-down approach, Stoeglehner et al, 2016) which spatially visualizes energy consumption according to building or

demographic parameters (e.g., building exposure, typology, year, density, etc.). Homeowners can use the tool to explore different retrofitting solutions by themselves or with the support of the OSS's technicians. Retrofitting solutions usually come out with information regarding the most suitable opportunities to gain financial contributions (public grants, incentives, etc.). A good example of this OSS sub-category is the Haarlemse Huizenaanpak³ initiative in the Netherlands, which also provides personal assistance to homeowners (e.g., technical advising, energy audit, home inspection) along with the online tool.

2. INTERMEDIARY MODEL

In the Intermediary model, the OSS acts as a broker, reducing the gap between demand (homeowners) and supply. The suppliers become a customer segment for the OSS, which asks them a brokerage fee. The Intermediary OSS supports homeowners in designing retrofitting interventions, both from a technical and financial point of view. The work execution and monitoring are provided by contractors, suppliers, and installers, selected directly by the customers. An interesting example is the initiative Retrofit Works⁴ in the UK that also provides a guarantee on energy savings. This represents a critical element for the Facilitation model that operates only in the orientation phase of renovation works. Indeed, monitoring of results, follow-up and quality control are usually not delivered by this model.

3. LENDER MODEL

The last sub-category regards the Lender model. In this model, the OSS acts as a financial institution. It provides to clients financing or co-financing products supporting them in designing the renovation financial scheme or it acts as a guarantor towards other financing institutions or commercial lenders. The OSS also may provide technical assistance by itself or through external professionals. A perfect example of this BM subcategory is the KredEx initiative⁵, placed in Estonia. Rarely the Lender model adopt other financial schemes, such as the on-bill financing scheme and the Energy Performance Contracts.

2.2. Coordination model

In the "Coordination" model (figure 5), the OSS acts as a coordinator between fragmented market players involved in the home renovation (e.g., energy consultants, contractors, suppliers, banks or other financial institutions). In addition to the technical and financial advising services provided by the Facilitation model, the Coordination model provides support and managing services along the whole renovation process, from energy audit to monitoring of results. Indeed, it represents a single point of contact for homeowners. The main characteristic of this archetype is the capacity to

HIGHLIGHTS

This model supports customers along the whole renovation journey. It operates as coordinator and project manager. It represents the main point of contact for customers and provide quality guarantee over the works and energy savings. Services are provided by establishing a strong collaboration with market players. This model asks for a fixed fee which cover the coordination and management services.

³ <https://huizenaanpak.nl/>

⁴ <https://retrofitworks.co.uk/>

⁵ <https://kredex.ee/en/who-we-are/sa-kredex>

ensure the quality of interventions and the achievement of high energy performance, which is crucial to attracting customers. The quality guarantee is performed by the establishment of strong and trustworthy partnerships with local actors, but also by training them or setting up certification schemes of suppliers and contractors. This contributes to creating a long-lasting value chain for the home renovation with benefits for both customers and the supply side (Table 2). Affordable financing is also provided thanks to an agreement with partner banks or public authorities that set up a revolving loan, with even the possibility to get the upfront payment of the works in case the homeowner cannot overcome high upfront investment costs. OSSs with a Coordination BM usually provide pre-defined packages for home renovation, that can fit many situations and reduce the designing costs. Tailor-made renovation solutions are instead hard to manage and coordinate when multiple actors work together and can reduce the capacity for the OSS to control and guarantee the quality of works. This represents a critical factor in terms of providing depth renovations. Depth home renovations⁶ require treating the building as a system. Solutions should be designed considering the interaction between many building elements, as the envelope, the technological systems, the environmental context and the final use. This type of interventions asks for long planning activities which increase the intervention costs. However, the pre-defined renovation packages offered by the Coordination model may represent a good trade-off between boosting home renovation and reducing the intervention costs. Given the heterogeneity of the actors, coordination might be difficult to maintain and achieve at times. It is more flexible and less risky for the OSS, but it needs a high shared consensus between the partners.

⁶ Navigant and Ipsos Belgium (2019) distinguish three different depths of energy renovation: 1) depth retrofit with the aim to achieve 60% of primary energy savings, 2) medium home renovation with 30% of primary energy savings; and 3) below threshold home renovation, like replacing a boiler, with low impact on primary energy savings, less than 3%. The most contributing interventions for decarbonising the building sector refer to depth retrofit, with high energy savings achievement. Such interventions require holistic and integrated solutions, which increase the costs of investments, the requirements in terms of knowledge and management capacities.

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COORDINATION MODEL

Key Partners	Key Activities	Value Proposition	Customer Relationship	Customer Segments
<p>FIXED/TRUSTED PARTNERS</p> <p>MULTIDISCIPLINARY NETWORK OF PARTNERS</p> <p>Many coordination models:</p> <ul style="list-style-type: none"> • Clusters • Strategic alliance • Joint venture <ul style="list-style-type: none"> • Financial institutions • Local contractors • Suppliers • Technical experts • Energy utilities • Local authorities • Designers 	<p>COORDINATION-MANAGEMENT</p> <p>Technical-Financial advising/assistance Project management Quality control Multi-stakeholder coordination Financial products (optional)</p>	<p>COORDINATION OF HOME RENOVATION PROJECTS AND PARTNERS</p> <p>QUALITY GUARANTEE</p> <ul style="list-style-type: none"> • Technical/financial support • Project management (single point of contact) • Multidisciplinary, cooperative-based solutions • Pre-defined packages • Monitoring/follow-up • Stakeholders training (trustworthy partners) 	<p>Personal (direct) assistance</p>	<p>Segmented</p> <ul style="list-style-type: none"> • Homeowners (single home) • Block of flats • Local authorities (public buildings-SH)
	Key Resources		Distribution Channels	
	<ul style="list-style-type: none"> • Human • Physical (equipment, offices) • Trusted (qualified) partners network • Financial 		<p>Online (website) Partners websites Help desk On-site visits Local events</p>	
Cost Structure		Revenue Streams		
<p>VALUE/QUALITY-DRIVEN</p> <ul style="list-style-type: none"> • Multidisciplinary Employees • Partners relationship maintenance (training courses-certification) • Physical Office (optional) • High initial costs for the provider of the financial products 		<ol style="list-style-type: none"> 1) Service fee (fixed price) for the coordination/management services 2) Fixed fee for training courses 3) Labelling fee (Fixed prices) 4) Recurring revenue (interest rate or other types of financing schemes) for the provider of the financial products 		

Figure 5 Coordination model - BM canvas

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> • Awareness-raising along the home renovation chain (training courses, certifications-labels, trusted partnerships). • High quality/control of the home renovation work (control over the whole renovation process, quality guarantee and secure energy savings). • Low initial costs (coordination of existing companies, suppliers, contractors). • Only one contract (one point of contact). • Fixed and trusted partners (multidisciplinary 	<ul style="list-style-type: none"> • High efforts for setting up and maintain the consortium/partnership/network. • High efforts for establishing the OSS (legal form, nature of the partnership, type of contracts). • High costs for human resources (coordination and management activities require multidisciplinary and high qualified employees). • Reducing the ability of the client to 'shop around' and choose their preferred supplier at each step of the refurbishment. • Inflexibility in the refurbishment options available

<p>network).</p> <ul style="list-style-type: none"> • Home renovation solution packages (fixed prices). • Newmarket opportunities for local existing companies. 	<p>to the client due to the fixed service package offered.</p>
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Table 3 Coordination model advantages and disadvantages

Within this BM, 2 subcategories emerge the Connection model and the Cooperation model (Figure 6).



Figure 6 Coordination model - Sub-categories. The two subcategories differ in terms of services, partnerships management and revenue streams. The first one only provides a list of certified players, does not offer credit access and gets paid by homeowners and suppliers. The second one coordinates partners and provides management services along with credit access. Market players become partners of the OSS which is the unique point of contact for homeowners. It gets paid by a % over the renovation costs.

4. CONNECTION MODEL

The Connection model plays as a network of trusted suppliers and experts. Actors within the network pay the OSS a fee for the publicity, new market potential and other benefits they get by being part of this scheme and are directly paid by the homeowner who requests their service. The OSS ensures the quality of works by developing a selection or certification process so that only high-quality suppliers are contracted to carry out the intervention. In this model, even though the OSS helps coordinate all the works, homeowners may have still to manage contracts and get in touch with several actors. It would require less coordinating effort for the OSS, but also may reduce the control over the quality of works and energy savings. The Superhomes⁷ initiative in Ireland represents a good example of this BM sub-categories. It provides technical and financial advising (grant application and claim processing) and project management services, along with support in selecting and engaging contractors.

⁷ <https://superhomes.ie/>

5. COOPERATION MODEL

The Cooperation model can be set up by a multi-disciplinary team in a cooperative manner, where several market actors with complementary competencies join together to plan and execute the renovation project. This model is similar to a contractors' cluster cooperation or a joint venture company, where small and medium enterprises act as a single big company to deliver integrated services. This model ensures control over costs and guaranteed performance, given that each actor specializes in a specific aspect of the project, and also lowers the vulnerability compared to isolated actors. In these models, the whole value chain of the renovation market is involved collaboratively – from architects and designers to material and equipment suppliers, from capital providers to engineers and developers. The Cooperative model offers integrated energy efficiency packages under its name, signing out a single contract with the homeowners and being responsible for the works. A further guarantee, services of monitoring of the results and after-work follow up are usually included. A good example is the Energies POSIT'IF⁸ initiative in France, which has been set up by a Private-Public partnership in collaboration with financial institutions co-financing the renovation projects.

2.3. Development model

The last model – the “Development” model – provides the strongest support to customers (Figure 7). Indeed, the OSS offers full home retrofitting solutions under its name and responsibility, covering the whole customer journey. OSS services include consulting, energy audit, building inspection, structuring and provision of financial support, project management, work execution, products supply (by itself or trusted suppliers), monitoring of savings and follow-up. In this case, the OSS can be set up independently without support from any

local actors. Compared to the previous model, this model offers tailor-made renovation solutions, as it can address customers' needs, not only in terms of technical and financial advice but also concerning the works executions and products supply. Since the OSS takes on a central role, it is held responsible for the quality of the works, and also for the achievement of estimated energy savings. Furthermore, besides supporting homeowners in getting public grants (fiscal bonus, incentives, etc.), it can also provide its own financing scheme, and then the OSS gets paid back by the homeowner via a service fee, loan interests, or other revenue forms. Homeowners have to interact with a single entity for any aspect of the project, including financing unless the loan is offered by external banks. This OSS acts as a general contractor, guaranteeing good quality works and the achievement of estimated energy savings even when sub-contractors are involved. Moreover, this model allows all homeowners to have access to financing instruments, including low-income households (Table 3). However, setting up such a complex structure is time-consuming, also from a legal standpoint, and since it directly competes with other market actors, like ESCOs, it is subject to all the regulations in force. A multidisciplinary team is required to carry on all the services, as well as financial resources. Internalise all aspects of the home renovation may increase the OSS launching costs.

HIGHLIGHTS

This model provides the strongest support and covers the whole renovation journey. It offers integrated and tailor-made solutions by its responsibility and name. It provides guarantee for the quality of works and the energy savings. It can also provide financial products. This model gets paid back by the homeowner via service fees, loan interests, or other revenue forms. Partners are not fixed and mainly are engaged as sub-contractors.

⁸ www.energiespositif.fr

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<ul style="list-style-type: none"> • <i>Multidisciplinary team.</i> • <i>Tailor-made solutions.</i> • <i>Holistic interventions.</i> • <i>Access to credit for low-income families.</i> 	<ul style="list-style-type: none"> • <i>High qualified and multidisciplinary employees required (high cost for human resources).</i> • <i>ESCOs competition.</i>
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Table 4 Development model advantages and disadvantages

In the Development model, 2 BM sub-categories emerge the Project management model and the Full implementation model.

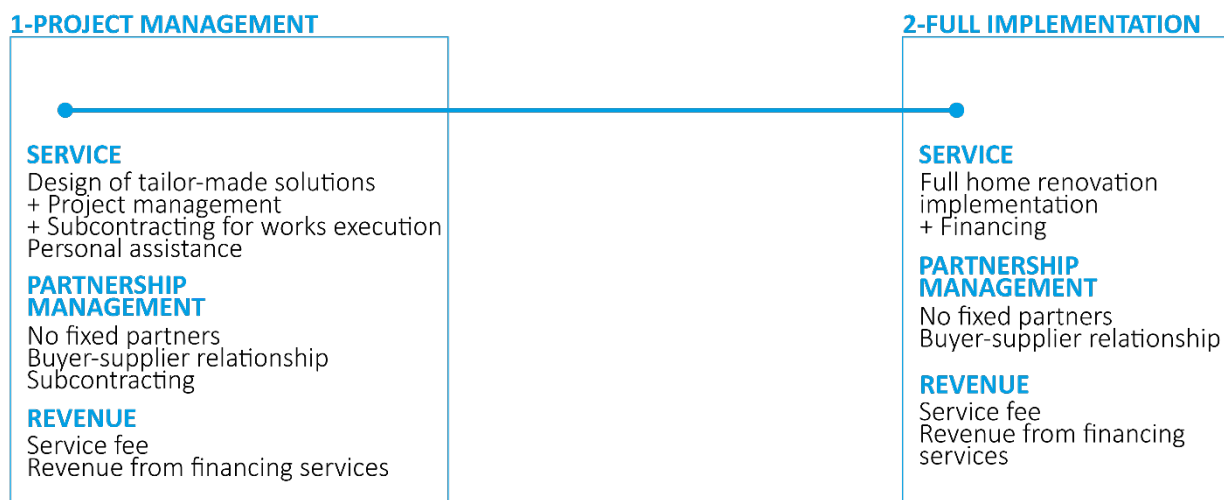


Figure 8 Development model - Sub-categories. In the Project management model, the OSS does not provide the work execution and easier access to credit. It involves sub-contractors and gets paid by homeowners via service fees or other forms of revenue schemes as the Energy Performance contracting. The second sub-category provides all services, including financing services.

6. PROJECT MANAGEMENT MODEL

In the Project management model, the OSS does not provide work executions and financial products by itself. Usually, it engages other companies and financial institutions for the delivery of such services. The OSS deals with sub-contractors and suppliers and guarantees the quality of works, acting as a project manager. Although external companies are not fixed, homeowners cannot choose their preferred supplier. Customers pay for the home renovation by themselves or asking for a loan, plus the service fee for the project management. The Bolig Enøk¹⁰ initiative in Norway is a good example of this BM sub-category. The OSS is responsible for the whole home renovation including the contacts with subcontractors, authorities, and financial institutions. It issues the invoice for the complete project and takes on all the risks towards the customers, being responsible for the achievement of energy savings.

7. FULL IMPLEMENTATION MODEL

¹⁰ <https://boligenok.no/>

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The Full-implementation model also provides work executions, products, and financial support, by financing or co-financing the interventions. The OSS internalizes all activities, competencies and resources needed. This model usually adopts the one-bill financial scheme or other types of revenue models. The full implementation BM has many similarities with the ESCO model. The main difference of this model is its ability to attract and give support to low-income households who wouldn't be able to afford the house renovation. A good example is the ARTEE-Nouvelle¹¹ initiative in France. It offers “key-in-hand” solutions for home renovation, combining consulting, project designing, financial products (mostly through loans), and follow-up services.

¹¹ <https://www.artee.fr/>

3. TOWARDS A BUSINESS MODEL DEFINITION FOR THE PILOT AREAS

3.1. Methodology and approach

Following the three BM archetypes and sub-categories, local partners (Padova IT, Timisoara RO, and EAP BG) have been invited to imagine the structure, aim, services and market segments of their own OSS.

Design and planning a new business may be a difficult and complex task without information and support. In order to facilitate this task, a two steps methodology has been developed.

In the first step, local partners have been invited to think about the future OSS BM by themselves. A list of general questions has been sent to each project partner, with the aim to guide and help them in focusing on the OSS main ambitions and structuring (Table 4).

SHARED VALUE
<ul style="list-style-type: none"> • Which is the main aim of the OSS? • Does the OSS have a social and environmental proposition? • Which is the OSS impact on the home renovation market? • Which are the expected long-term impacts?
VALUE PROPOSITION
<ul style="list-style-type: none"> • What value/additional value does the OSS deliver to customers? • What customer needs does the OSS satisfy? • Which of the customers' problems does the OSS help to solve?
CUSTOMER SEGMENTS AND DISTRIBUTION CHANNELS
<ul style="list-style-type: none"> • Which types of customer does the OSS want to reach? • Through what channels does the OSS reach customer segments? • Do you already have distribution channels?
CUSTOMER RELATIONSHIP

<ul style="list-style-type: none"> • What relationship may increase the capacity to produce results? • What type of relationship do customers expect from the OSS? • How costly is it?
SERVICES – KEY ACTIVITIES
<ul style="list-style-type: none"> • What key activities does the value proposition require? • How does the OSS deliver the value proposition to customers? • Which type of services are delivered by the OSS (also in terms of communication)?
PARTNERSHIP MANAGEMENT
<ul style="list-style-type: none"> • Does the OSS need partners to deliver value to customers? • Who are the key OSS partners? • Which key resources does the OSS acquire from partners? • Which is the nature of partners (suppliers, investors, collaborator)?
REVENUE STREAM AND COSTS
<ul style="list-style-type: none"> • What value are customers willing to pay for? For what do they pay? • Which activity will produce revenue? • Do you have already economic resources available to finance the OSS? • Is it possible to set up a revolving or seed fund? What resources? • Do you have already resource available also in terms of employees/experts, offices, other need equipment?

Table 5. General questions submitted to project partners to guide them in thinking about the OSS BM. The questions follow the Business Model Canvas framework plus the Shared value factor.

During this process, a set of targeted group meetings with local stakeholders has been foreseen with the support of local partners (Sogesca, Sinloc and Padova Municipality for the Padova area (IT), Timisoara Municipality for Timisoara (RO), and the Bulgarian Energy Agency of Plovdiv for Vidin and Smolyan). The meetings help to understand the interest of local stakeholders, the opportunities of engagement and the main weaknesses of the local markets (see PadovaFIT EXPANDED D.4.3 and D.5.3).

The second step aimed to co-design the OSS BM. To support the discussion and the OSS BM definition, a collaborative co-design workshop has been developed using the “miro” online platform. Through this free online platform, local partners and stakeholders were invited to co-create the OSS BM, one per target area.

The selection of participants at the co-design workshop is crucial for the process. To better organize the event, we asked project partners to provide a list of potential participants. This allowed engaging all local stakeholders interested in designing the OSS BM, like representatives of the municipality, public officers, municipality legal consultants, representatives of professionals’ boards, etc.

Before the workshop, a technical document explaining the aim and the differences between BM archetypes has been provided to each participant. An operational document on how to use the “miro” platform and its main functionalities has been also provided to participants. This assures a common knowledge about the OSS concept and increases the effectiveness of the co-design workshops. Both documents - the technical and the operative one - have been provided in the local language (Italian, Romanian, and Bulgarian) in order to increase the information accessibility.

In order to support the discussion and the design of the OSS model, a blank workboard following the Osterwalder et al. (2005) framework has been developed on the platform “miro”. Then participants have been invited to fill out the Canvas in a collaborative way.

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The workboard consists of 5 components: 1) the workshop instructions; 2) a blank business model canvas; 3) a list of proposal elements; 4) a list of existing elements; 5) a list of critical issues (Figure 9).

The list of proposal elements provides a set of recurring characteristics that emerged from existing OSS initiatives. Participants can use this list or add new elements to fill out the business model canvas. The list of existing elements provides examples of contextual factors that can support the OSS setting up, e.g. financial and human resources already available. Participants can add other elements available in the target area that can facilitate the OSS implementation. The list of critical issues displays hindering factors and problems that can obstacle the OSS in the target area, e.g., the presence of blocker stakeholders, the lack of economic resources.

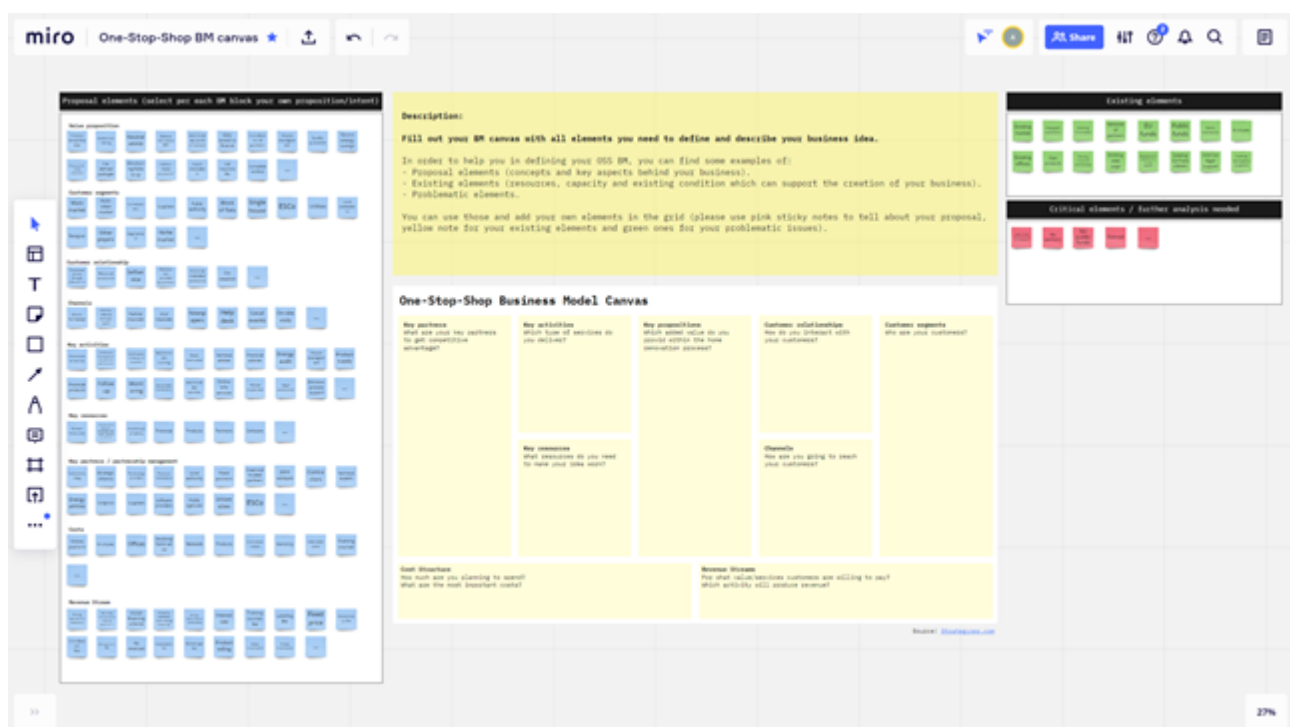


Figure 9. Workboard developed on miro platform. Participants were invited to move the coloured post-it with the aim to fill out the blank BM canvas.

Accessibility and inclusion have been taken into consideration for designing the workboard. Colours, shapes and texts font are selected in order to reduce colour-weakness or colour-blindness problematics and increase the readability of all the contents, following the EU Digital inclusion & web accessibility guideline (2019).

To all participants has been asked to fill out the business model canvas, moving the coloured post-it into the blank frame or adding new ones. Participants could also add comments, opinions and all useful information for the OSS BM definition, as shown in Figure 10.

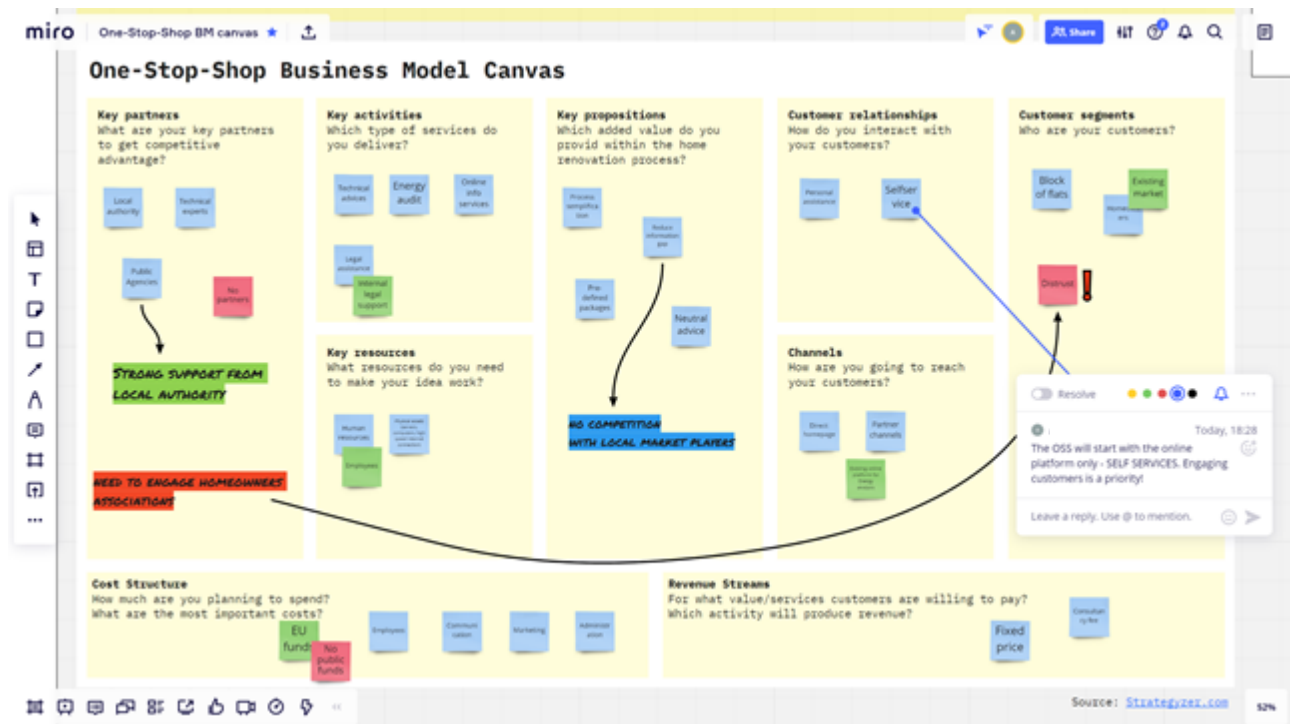


Figure 10. Example of the OSS BM co-design workshop result.

Considering the time schedule of PadovaFIT EXPANDED project, the second step has been applied first to Padova target area. Indeed, Padova should launch the first OSS in September/October 2022, while Timisoara will follow the Padova OSS example and will launch its initiative at the end of the project. The two Bulgarian cities will be supported in defining a Strategic Plan for a future OSS development. This output will be provided at the end of the project.

The first co-design workshop has been performed in May 2021 with the representatives of Padova Municipality and local partners. The co-design workshop took two hours. The session has been recorded using the “miro” functionality, with the consent of all participants.

3.2. The OSS Business Model Canvas – Padova target area

The co-design workshop has been held on the 31st of May and was coordinated by UB. The workshop focused on the OSS BM co-design in the Padova area.

Four Italian partners¹² of PadovaFIT EXPANDED project and two Padova Municipality representatives participated in the session. In total 9 participants took part in the workshop.

¹² Municipality of Padova, Forum per la Finanza Sostenibile, Sinloc, Sogesca, Bocconi University (workshop coordinator).

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The workshop led to the definition of a BM draft (Figure 11). It will require further analysis and discussions between project partners, municipal technicians and local players. Indeed, the need for other meetings emerged, especially to engage local market players, which have been involved during the previous months (Tasks 4.3 and 5.3).

One-Stop-Shop Business Model Canvas (Padova)

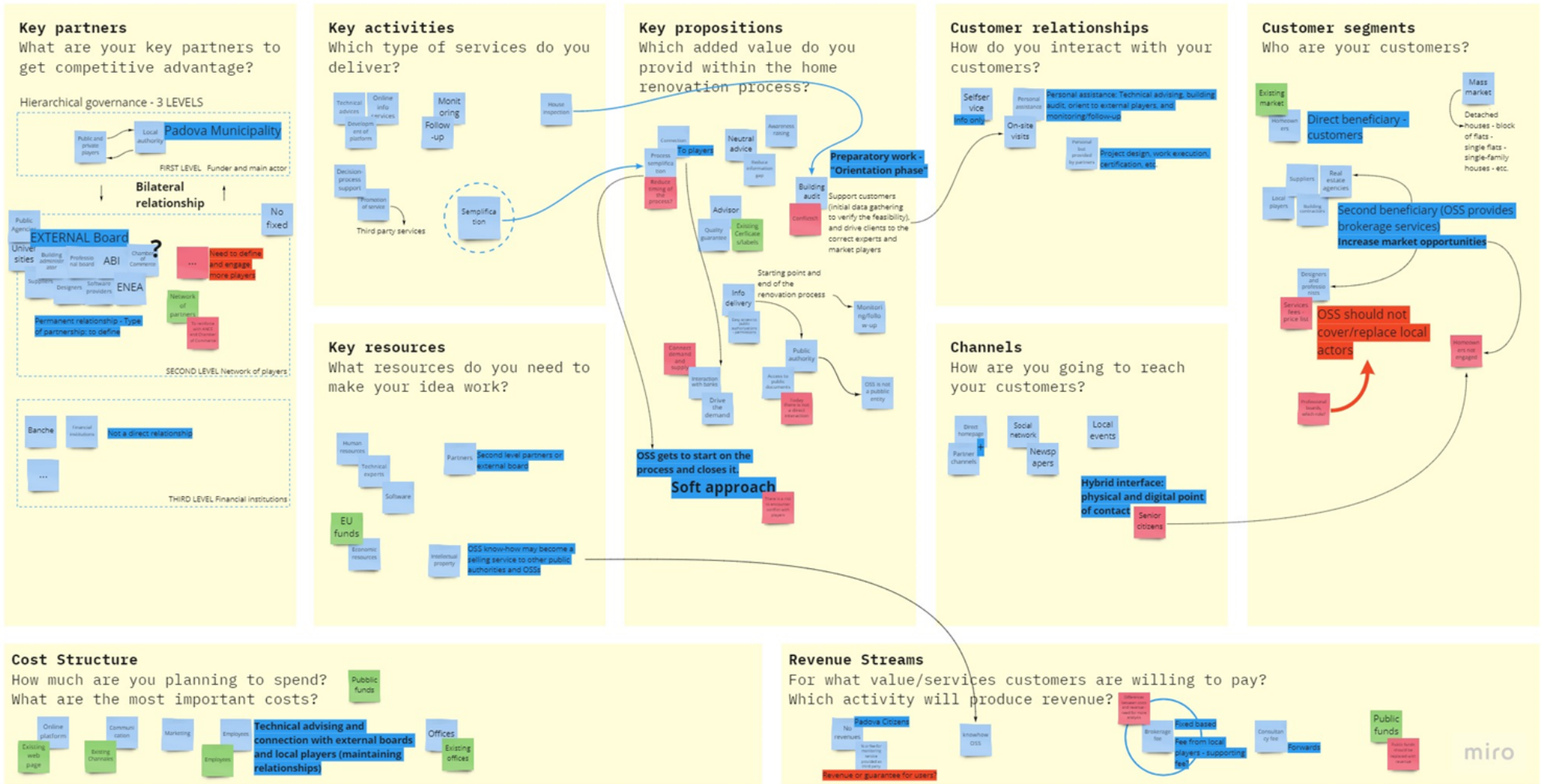


Figure 11. Padova BM co-design workshop results.

The following sections describe the OSS Business Model in Padova, following the 9 blocks composing the Business Model Canvas.

Value proposition

According to the co-design workshop results, the OSS in Padova aims to facilitate the home renovation process by providing easier access to neutral, impartial and high-quality information. The OSS would mainly operate at the “orientation” and “monitoring” phases of the home renovation process. First, the OSS would support and motivate homeowners. Then, it would provide monitoring services at the end of the works, acting as a third party, since it does not participate in the project design and work execution.

The main innovation refers to the simplification of the renovation process, performed by the provision of 5 services:

- **Direct and easier access to information**, aimed at users and market players. It aims to reduce the knowledge gap and the effort required to get access to all information needed. Indeed, in Italy, information is not easy to collect, due to the overabundance of policies and norms (see D.2.2), and not easy to understand for no expert users. This service offers all information in a single point. A similar service has been already activated in the form of an Energy Saving Desk: <https://www.padovanet.it/informazione/sportello-il-risparmio-energetico-del-comune-di-padova>
- **Consultant services and decision-making support**, aimed at end-users. It aims to increase the shared awareness about the opportunities and benefits coming from the energy home renovation. The type of consulting services still needs to be defined. From the workshop emerges the possibility to offer energy audit and building inspections in order to verify the project feasibility. This aims to inform the customer about energy-saving opportunities and bureaucratic procedures, but also it can help in directing customers in the next steps of the home renovation journey.
- **Easy access to public documents**, aimed at the market players. It reduces the time and effort required for professional to get access to public documents. This is particularly relevant in Italy in order to access the Super Bonus 110%.
- **Direct and easy connection between supply and demand**, aimed at users and market players. The OSS does not offer a guarantee over the market players. The quality of suppliers is guaranteed by professional boards and trade associations, which already offer this service. The OSS may although provide a standard contract, which requires minimum energy savings. This can add a further guarantee to customers and assure the achievement of expected energy savings. However, the OSS does not overlap market players, but it provides support to both edges of the chain (supply and demand side). Indeed, the OSS aims at enlarging the market base of players.
- **Monitoring and follow-up services** for end-users. It aims to guarantee the quality of works and energy savings. Quality assurance is so performed by a third party that is not involved in the project design and work execution.

Customers

There are two main customer segments:

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- The first segment, “**direct customers**”, includes the homeowners, tenants, Social housing entities (ATER), owners' cooperatives. This segment includes all types of homes (condominiums, single-family houses, terraced houses, single apartments, etc.). The aim is to engage as many homeowners as possible, even those who, due to lack of awareness, has not yet been engaged by the traditional market. Direct customers will have access to all the services made available by the OSS, some of which are free of charge.
- The second segment, “**indirect customers**”, includes professionals (architects, engineers, designers, etc.), professional boards, contractors, suppliers, and others service providers. This segment takes advantage in terms of business increasing. The OSS offers an intermediary service asking a sort of brokerage fee (to be defined) to be part of the OSS network. The role of professional boards and category associations needs to be clarified. Those can help the OSS in fulfilling this intermediary service.
- A future **new customers’ segment may include public authorities** and agencies who want to implement an OSS in their territories. This segment will be engaged at the end of PadovaFIT EXPANDED project when the know-how developed during the project can be shared through the stipulation of consulting contracts.

Key activities and services

The OSS will offer the following services:

- **Online website and an energy savings simulation platform** where the direct and indirect customers get access to all information needed for the home renovation.
- **Technical and legal consultant services.** The OSS offers consultant services to homeowners at the orientation and monitoring phase of the home renovation journey. At the orientation phase, the OSS provides technical advice by offering energy audit and building inspection services. This allows the homeowners to acquire all information needed for making aware decisions. The OSS asks homeowners a set of data regarding the house energy performance, inspects the house and then produces a feasibility study on the best technical solutions and linked energy savings. The OSS also provides a list of market players to execute the works. In agreement with market players, the OSS helps in drafting the contracts, requiring min quality standards and min energy performance. At the end of the works, the OSS provides monitoring and follow-up services in order to verify the energy savings. The external role of the OSS will be preserved. No interference will be provided by the OSS in terms of contracts signed between homeowners and suppliers.
- **Marketing and communication activities.** The OSS through its communication activities aims at engaging as many as possible homeowners and motivate them to start a home renovation project. The OSS will act as a boosting centre for home renovation practices, so marketing and communication will be one of its main and relevant activities.
- **Know-how sharing activities.** The OSS will share with other local authorities and public agencies its know-how concerning the way to develop a One-Stop-Shop for the energy home renovation. This will be a future OSS service.

Channels

Four channels emerge to engage customers (direct costumers):

- **OSS website.** The OSS will communicate through a website where users can get access to all services available. This channel will be permanent. In Padova, a dedicated website has been already launched at the following link: <https://www.padovanet.it/informazione/sportello-il-risparmio-energetico-del-comune-di-padova>. Direct communication is also performed using social networks, where the OSS will launch marketing campaigns focused on different OSS services.
- **OSS offices.** Customers can decide to book an appointment with the OSS technicians in order to ask for information and advice about the energy home renovation process. Consulting services can be performed in the OSS offices or in loco to facilitate the acquisition of technical data on the houses energy performance.
- **Partners websites.** The partners affiliated with the OSS will communicate on their websites the OSS initiatives and services. Partners will be professionals' boards, the chamber of commerce, contractors, suppliers, etc., which will set up a collaboration with the OSS. The type of collaboration and partnership should be further defined. This communication channel would be also permanent.
- **Newspapers and local events.** Advertising of the OSS and its services will be inserted in newspaper and other local communication channels, like posters, promotional products, etc. At the launch of the OSS, a set of social events will be organised to inform citizens about this initiative. Those channels allow the OSS to reach all type of users, also senior citizens who are less confident with digital communication.

Customer relationships

Two types of costumers' relationships emerge from the co-design workshop:

- **Self-service:** information access, energy simulation platform, news and events information. Costumers can acquire all information by themselves visiting the OSS websites and using the simulation tool. Through it, homeowners can visualize the benefits come from energy home renovations and the technical solutions available to achieve better energy performance. This tool does not replace the consulting service but can easily inform homeowners and increase their awareness.
- If required, customers can ask for **personal assistance** provides by OSS technicians which will support homeowners in getting information and start a home renovation project. Those types of services consist of an energy audit, building inspection, market players suggestion, contract drafting, and monitoring of results.

Key partners and OSS Governance

The OSS will be organised into three hieratical levels of governance:

1. **Funder and main partners.** At the first level, the Municipality of Padova (OSS funder) and the main OSS partners (private and public entities) provide all OSS services. The legal OSS form and the type of relationship with partners will be further analysed and define in task 2.5.

2. **External board.** Different stakeholder (both at the national and local level) will be engaged to form an external board with the aim to support the OSS. Those can be public agencies, like ENEA (National Agency for Technology, Energy and Sustainable development), chamber of commerce, professional boards, category associations, and universities, but also general contractors and private actors. The external board will be a permanent committee and each member will stipulate a specific agreement with the OSS. The external board will not be fixed, and other entities will be added. The type of agreement and the representatives of each member should be better defined in the next months.
3. **Financial institutions.** The OSS will collaborate with financial institutions and banks. However, this collaboration won't be permanent and fixed. It will be performed by leading homeowners to a specific bank for all financial aspects linked with the home renovation.

The OSS at the beginning will have a public nature, later it will become a Public-Private-Partnership. The OSS legal form will be better defined in the next months after the development of a feasibility study (task 2.5).

Key resources

Considering the OSS services and governance, the most relevant resources are:

1. **Human resources:** technical experts, like architects, engineers, and legal consultant to support customers in drafting contracts and fulfilling administrative requirements.
2. **Offices, digital resources, and technical equipment:** software, website, offices, etc., where most of all OSS services are offered.
3. **Network of partners** (different type of relationships will be set up) useful to fulfil the OSS value proposition.
4. **Economic resources.** The development and launch of the OSS will be financed by a mix of public funds. After the launch, the OSS will need proper financial resources to be maintained (see Revenue streams section).
5. **Know-how.** To set up the OSS, strong know-how about how the OSS works and its benefits has been developed by the funders. This know-how will be a relevant resource to share with other entities or sell.

Costs

The costs of the OSS have been estimated in terms of qualitative costs. These refer to:

1. **Human resources.** This represents the highest cost for the OSS, considering the need to hire experts and technician who can support the direct customer from a technical, administrative, and legal point of view. OSS employees will also manage the relationships with the network of players, with the aim to maintain and reinforce the collaborations. The Padova municipality already hired high skilled professionals who can constitute the future OSS team. However, there is a need to better define the legal form of the OSS to understand how to contract employees. The cost for human resources has been estimated around 25k €-50k €/year/person.
2. **Website/online platform design and development.** The Padova Municipality already launched a website where homeowners can access information about home renovation and book an appointment

with experts. The website should be updated, and a specific tool added in order to allow homeowners to simulate home renovation options and evaluate the best solutions available. The design of this energy renovation tool and the update of the website would cost around 30k (full covered by EU funds), and then the maintenance would cost 5k/year.

3. **Marketing and communication** (see channels section). The marketing and communication activities will be performed using different communication channels, e.g., OSS website, social networks, newspapers, local events, partners websites. The Padova municipality already launched a communication campaign and a proper website. The ongoing and future communication and marketing activities would cost 10k€-50k€ /year.
4. **Physical offices and equipment**. The OSS offers both digital and physical services (see key activities section). Thus, the OSS will need physical spaces for front and back-office services. The municipality of Padova has already dedicated spaces, but those need further evaluation in terms of future availability. The cost for offices and equipment would be around 0k€ to 20k€ /year (places rent) and 5k€ - 10k€ /year (equipment).

The OSS costs will be further estimate in the next task (2.5) when the Business Plan will be developed. At the launch, the OSS will be fully financed by public funds (EU and local authority funds).

Revenue

The revenue streams will change in time, according to three phases of the OSS evolution:

1. **Launch phase**. In the beginning, the OSS will have a public legal form and all costs will be covered by public funds (see costs section). In this phase, the OSS services will be available for free to the two customers segments (direct customers and indirect customers). This allows the OSS to test the quality and the benefits that come from the services offered and to engage the network of market players.
2. **Operating speed**. When the OSS reach the operating speed, it will assume a private-public partnership legal form. In this phase, the access to information will be free of charge for homeowners, while the consulting services (energy audit, building inspection, etc.), and the monitoring services will be paid by homeowners – fixed fee or a percentage over the renovation costs -. Market players will maybe pay a brokerage fee to the OSS in order to be part of the OSS network.
3. **Final phase**. At the final step of the OSS evolution, the OSS will be also able to share its know-how with other public entities interested in developing an OSS in their territories. This service will be performed in the form of consultancy or training courses, which will be paid for.

The revenue streams, as well as the costs, will be better defined in the next tasks.

3.2.1. CONNECTION TO OSS ARCHETYPES AND SUBCATEGORIES

The OSS BM developed for the Padova area shows many similarities with two OSS BM subcategories: the Intermediary model belonging to the Facilitation archetype, and the Connection model belonging to the Coordination archetype.

3.2.1.1. Intermediary model

In the “Intermediary” model, the OSS acts as an intermediary, reducing the gap between demand (homeowners) and supply. Suppliers become a customer segment for the OSS, which asks them a brokerage fee. Project design, work execution and monitoring are provided by contractors, suppliers and installers, selected directly by the customers. The OSS only participates at the “orientation” phase, providing technical advice and a list of available market players. The OSS does not offer any quality guarantee over the work and energy savings and does not provide easy access to credit.

Similarities with the OSS in Padova	Dissimilarities with the OSS in Padova
<ul style="list-style-type: none"> • <i>The OSS operates at the orientation phase of the renovation journey</i> • <i>The OSS provides a list of market players (professionals, contractors, suppliers) without offering a direct quality guarantee</i> • <i>Homeowners and market operators represent two customer segments</i> • <i>Reduction of the gap between supply and demand</i> • <i>Market players pay a brokerage fee</i> • <i>Non-permanent partners</i> 	<ul style="list-style-type: none"> • <i>The OSS in Padova offers more integrated services (technical, administrative and legal advice, monitoring of results)</i> • <i>The OSS in Padova offers also personal assistance to customers</i> • <i>The quality guarantee is provided by professional boards and category associations, which collaborate with the OSS in Padova</i> • <i>The OSS in Padova also supports customers in drafting contracts to assure minimum levels of energy savings</i>

3.2.1.2. Connection model

The “Connection” model works as a network of trusted market players. The players within the network pay a fee for advertising, new market potential and other benefits they get by being part of this scheme and are paid directly by the homeowner for the services they provide. The OSS guarantees the quality of interventions. In this model, the OSS helps in coordinating the whole energy home renovation process, although homeowners may still have to manage contracts and get in touch with different players.

Similarities with the OSS in Padova	Dissimilarities with the OSS in Padova
<ul style="list-style-type: none"> • <i>Networks of market players</i> • <i>Personal assistance to the customer</i> • <i>Fixed fee for consulting services</i> • <i>Non-fixed partners</i> • <i>Drafting contracts (minimum energy savings)</i> 	<ul style="list-style-type: none"> • <i>The quality guarantee is provided by professional boards and category associations, which collaborate with the OSS in Padova</i> • <i>Management and coordination of the renovation process are not provided (the OSS in Padova operates in the orientation phase and the closing phase of the process)</i> • <i>Training and certifications are not provided by the OSS in Padova</i>

This can help in defining the Business Plan of the future OSS in Padova. Indeed, looking at the OSS initiatives belonging to those two models, project partners can acquire information about how those two models operate, create, and deliver value to the market. This can be also used to show the potentiality of the OSS to local market players and engage them in the process.

Starting from those results the following tasks will explore the characteristics of those two models in order to provide more insights about the related business plan. Two feasibility studies, following the results of the co-design workshop and the OSS BM analysis, will be developed for the Padova area.

3.3. The OSS Business Model Canvas – Timisoara target area

Timisoara municipality (TIM) is the first target area to replicate the PadovaFIT approach in defining the OSS BM. The municipality started by arranging meetings with local stakeholders, following Padova example. This allowed project partner to understand the contextual situation in terms of market maturity and local players' interest in collaborating or supporting the OSS initiative. Between three to five meetings with local stakeholders took place in 2021. A brief presentation on what is an OSS, how it can operate and which are the main benefits, has been performed at the beginning of all meetings. Results will be summarized and reported as an update in D4.3 and D5.3. Those provided a relevant base for the OSS BM co-design activities.

An explanatory workshop has been planned and performed by UB within a capacity-building session - December 2021. During this “teaching experience”, all PadovaFIT EXPANDED partners participated in Timisoara OSS BM drafting with the aim to share knowledge and experience, especially from Italian ones who already performed a co-design workshop. A dedicated work-board has been created for Timisoara Municipality, which was asked to move the corresponding post-it in the BM canvas sections according to its idea for the future OSS model.

Timisoara established a permanent network with local and national stakeholders during 2022 to better define the OSS BM, especially with SMAFIN (SMARt FINancing Implementation) - a consortium focused on

promoting energy efficiency. Following Padova pilot examples, different events have been scheduled on April 2022, together with Ms. Florentina NANU - Romanian Team Member at the Managing Partner Business Development Group and Mr. Horia PETRAN - Senior Scientific Researcher and Coordinator, Cluster President pRO-nZEB, Building Knowledge Hub from Romania - INCUB URBAN-INCERC. Ms. Milena AGOPYAN - the representative of the Energy Agency of Plovdiv project partner was engaged in these events.

The first roundtable organized within the SMAFIN project aimed to encourage a structural dialogue between key Romanian stakeholders, in order to identify barriers to investment in home renovation and energy efficiency, according to national priorities and opportunities.

The second roundtable aimed to address the topic of FINANCING SOLUTIONS FOR SUSTAINABLE INCREASE IN ENERGY EFFICIENCY IN BUILDINGS AND INDUSTRY and it was structured around three main topics of discussion:

1. Integrated Services for the Renovation of Residential and Public Buildings,
2. Ensuring Energy Efficiency in Economic Operators,
3. Development and Operationalization of the Financial Instruments Necessary for the Renewal Strategy.

The event benefits from the support of the Romanian Government through the Department for Sustainable Development, the Ministry of European Investments and Projects, the Ministry of Development, Public Works and Administration, the Ministry of Energy and the Ministry of Finance. Results have been used to define the most suitable BM for the OSS.

The following sections describe the OSS Business Model in Timisoara, following the 9 blocks composing the Business Model Canvas.

Value proposition

The OSS in Timisoara will be part of Timisoara's public authority, and it will act as a link between service providers and final beneficiaries (homeowners). It will work as an information centre (INFORMATION HUB), providing also direct connection with existing technical and financial actors in the market. OSS will function as a reference point for those who want to access funding through national programs (i.e., available funds) and carry out rehabilitation works through Timisoara Municipality. The OSS will be able to provide a list of certified/approved market players. A track record of market players experience will be provided by the OSS. The OSS will guarantee an impartial source of information for final beneficiaries, by offering transparent advice on financial and technical solutions available on the market. The OSS will provide final beneficiaries with a step-by-step presentation of procedures to access public or private financing, as well as the necessary authorizations for the execution of retrofitting works.

The OSS is seen as a means for boosting home renovations through public funds enabling the creation of a critical mass for driving a significant change in behaviours.

Customers

All Timisoara citizens can access and be beneficiaries of OSS services. Even if services are mostly focused on homeowners; owners' associations, tenants, building administrators and the private sectors can take

advantage of OSS presence and services. No specific target groups have been identified, in order to engage a wide audience.

Key activities and services

The OSS will offer information access and technical advice. It will also facilitate the connection with market players and financial institutions.

Services offered:

- *citizens will be advised with basic information on home retrofitting solutions and financing opportunities.*
- *citizens will be advised on legal, technical and financial aspects regarding the multi-annual local program on building energy performance or other programs currently underway.*
- *citizens will be advised with information regarding procedures to obtain building permits, street nomenclature addresses, historically protected areas, etc.*
- *citizens will be advised on the rehabilitation of historical buildings, providing information on standard legislation, and legislative constraints.*
- *citizens will be advised on thermal rehabilitation, facade rehabilitation and energy efficiency measures, plus energy certifications process.*
- *citizens will be advised on available technologies and related prices (energy efficiency measures and renewable energy production).*
- *citizens will be advised on existing fiscal incentives (offered by local or national public authorities) and financing opportunities.*
- *citizens can access a list of trusted market players (technical and financial players).*
- *citizens will receive information materials, and standardized forms made available by the OSS. Those will be updated periodically, once a year or as often as needed, by the OSS staff.*
- *citizens will benefit from direct relations with public institutions.*

Channels

Timisoara Municipality (OSS promoter and funder) internal communication channels.

Open, transparent and easy communications through a web application. Within the website, a dedicated section will focus on the OSS. All necessary information will be made available to citizens, concerning energy retrofitting solutions and opportunities for residential buildings. It will provide a step-by-step guide, with documents that can be downloaded, filled out and sent to public authorities involved in the authorization process, reducing time and effort. Lists of institutions and collaborating companies are also provided online. The website will be a sub-domain of Timisoara Municipality website. News and advertisements will be published on the main Home page.

The OSS will be part of the Citizens' Information and Counselling Service - Community Relations Department, one of the already existing departments in Timisoara City Hall. A physical office will be dedicated to the OSS.

Customer relationships

Two types of costumers' relationships are taken into consideration:

- Self-service: information, documents to download, citizen guide for home rehabilitation, energy efficiency solutions (private buildings and condominiums), news and events information. Customers can acquire all information by themselves by visiting the OSS website. Through it, homeowners can visualize information and learn about technical solutions available to achieve better energy performance.
- If required, customers can ask for personal assistance provided by OSS technicians who will support homeowners in getting information about retrofitting process.

Key partners and OSS Governance

Fully public entity.

The OSS will be developed as part of the local public administration within the Citizens information and advice Service – Community relations Directorate, which already exists.

A list of verified professionals and market players will be available, considering the interest of experts in participating and contributing to the OSS initiatives. However, those are not OSS partners. Invitations have been sent to professionals and market players for being part of the OSS list. The registration procedure requires professionals and market players to provide detailed information regarding their experiences in the field of energy efficiency. The invitation has been sent to:

- a. architects,*
- b. designers,*
- c. building operators,*
- d. energy auditors,*
- e. financial consultants,*
- f. consultants.*

To be added to the OSS list, players must provide a track record based on their experience. Fees are not included.

Key resources

Key resources are already available and are fully provided by the OSS promoter and funder, which is the Timisoara Municipality.

The OSS uses internal resources coming from Timisoara Municipality, both in terms of human capital, physical offices for back and front offices, and equipment. In terms of expertise, the Timisoara Municipality should reinforce internal skills and expertise to cope with the OSS aim. Thus, new high-skilled employees will be hired when the OSS is set up.

In terms of external collaboration, the OSS will collect verified and high-qualified market players to provide a list of professionals to homeowners.

In terms of communication and marketing activities, the OSS will use internal sources from the Municipality, such as the website and communication channels.

Costs

Costs are covered by Timisoara Municipality's annual budget.

The OSS will work as a new entity within the Timisoara Municipality, using internal sources already considered in the financial statements. Till the end of 2022, the Municipality cannot hire new people, since the Romanian government has suspended public calls, from July 1, 2022. In the following years, the OSS may search for new high-skilled employees to fulfill its duties. The OSS also does not need to buy new equipment, since the institution got benefits from an extensive program of equipment modernization. The OSS costs will be fully covered by Timisoara Municipality's annual budget since it will be a public entity as a part of the Municipality.

Revenue

No revenue.

In Timisoara, OSS services will be provided by the Municipality for free to all citizens, including homeowners, tenants, homeowners' associations, condominiums and the private sector. Thus, OSS activities and services will not produce any revenue. Services are offered directly by the local administration, as a support tool to find solutions for energy efficiency in residential buildings. Any services delivered by market players, included in the OSS list, will be provided with a fee which is paid by final customers (homeowners). Project design, work execution and monitoring services are provided by contractors, suppliers and installers, selected directly by the customers. The OSS does not offer any quality guarantee over the work and energy savings, and it does not provide easy access to credit.

3.3.1. CONNECTION TO OSS ARCHETYPES AND SUBCATEGORIES

The OSS BM strictly follows the Advisor subcategory within the Facilitation archetype. In this subcategory, the OSS provides only free online information and services, like technical and financial preliminary advice or the list of market players that homeowners can select for performing the renovation works. This model is usually promoted by public authorities, considering its main social aim. All customers can access information and self-plan their home retrofitting. The services are free of charge so a wide audience can be reached. It can increase awareness among homeowners and enlarge the renovation market by providing new business opportunities to local operators, which are preselected according to their experience. However, the capacity to boost deep renovation and support energy transition is very scarce.

3.4. The OSS Business Model Canvas – Vidin and Smolyan target areas

A similar approach has been applied to define the OSS BM for two cities in Bulgaria: Vidin and Smolyan. With the support of the Bulgarian Energy Agency of Plovdiv (EAP), local stakeholders have been engaged during a set of meetings. First, between October 2021 and January 2022, a survey has been sent to selected key

stakeholders (private and public sector) focusing on how to structure the Bulgarian OSS. EAP received 8 filled questionnaires: 4 from construction companies, 1 from the Bulgarian construction chamber, 1 from Energy Efficiency and Renewable Sources Fund, and 2 from Bulgarian NGOs.

An explanatory co-design workshop has been planned and performed with the coordination of UB during a capacity-building session in December 2021. During this “teaching experience”, all PadovaFIT EXPANDED partners participated in the OSS BM drafting with the aim to share knowledge and experience, especially from Italian ones who already performed a co-design workshop. A dedicated work-board has been created for Vidin and Smolyan Municipalities on the “miro” platform. EAP, which is in charge of supporting the OSS setup in Bulgaria, was asked to move the corresponding post-it in the BM canvas sections according to its idea for the future OSS model.

For a better understanding of the OSS BM, EAP invited key stakeholders to a set of targeted co-design workshops using the “miro” online platform between December 2021 and January 2022.

Five online meetings were organized:

1. *Co-design workshop with Sustainable Energy Development Agency*
2. *Co-design workshop with municipalities of Vidin, Smolyan, Plovdiv and Burgas*
3. *Co-design workshop with Bulgarian NGO- EAP team, Sofia Energy Agency, Sofia Energy Centre, Regional Energy Agency – Pazardjik*
4. *Co-design workshop with Association of Bulgarian Energy Agencies and energy auditors and consultants*
5. *Co-design workshop with EnEffect, Union of the Bulgarian Black Sea Local Authorities, Black Sea Energy Research Centre*

Two real meetings were held without the use of the “miro” platform:

1. *22/11/2021 – with construction companies and citizens*
2. *6/12/2021 – with energy consultants and energy auditors*

Results have been used to define the most suitable BM for the OSS. At the end of the project, the Strategic Action Plan will provide all information useful to design the future OSS and create a favourable base for the launch of the OSS after the end of the project.

The following sections describe the OSS Business Model in Bulgaria, following the 9 blocks composing the Business Model Canvas.

Finally, the OSS will ensure legal and technical support to municipalities for launching public procurements for the implementation of EE measures.

The main innovations are performed by the provision of 6 services:

1. *Direct and easier access to information.*
2. *Consulting services and decision-making support. The OSS will offer different consulting services:*
 - *information on grants, loans, or other forms of financing,*
 - *information about suitable and innovative EE measures, including heating/cooling systems replacement with new and more efficient RES generators,*
 - *technical advice regarding innovative EE integrated packages,*
 - *paperwork preparation- filling official templates,*
 - *support in establishing homeowner's associations.*
3. *Easy access to public documents. In Bulgaria, new programs for buildings renovation are under implementation thanks to the National Resilience and Recovery Plan, the Program for Development of the Regions 2021 – 2027, and the Operational Program "Environment 2021- 2027" for heating systems replacement. The OSS will provide information and access to official documents – requirements, eligibility criteria, application templates, etc.*
4. *Feasibility studies and energy audits. The OSS will provide an energy audit and suggest appropriate energy-saving measures in accordance with the regulatory/minimum energy efficiency requirements.*
5. *Project budgeting for home renovation.*
6. *Legal and technical support to municipalities for launching public procurements for the implementation of EE measures in public buildings.*

Customers

There are two customers segments:

1. The first and primary customers are the homeowners, tenants, homeowners' associations, and facility management companies. This segment includes all types of homes (condominiums, single-family houses, terraced houses, etc.). The aim is to engage as many homeowners as possible, even those less engaged by the traditional market. Even more – in Bulgaria, multifamily residential buildings represent 5% of the total residential buildings. However, the total surface occupied by multifamily buildings is almost equal to the sum of single-family buildings.
2. The second customers are public authorities. This segment includes local authorities and Municipal Enterprise "Residential issues".

Key activities and services

The OSS will offer the following services:

1. Online website (owned and maintained by EAP) where customers get access to all information needed for home renovation.
2. Technical, legal, and financial consulting services. The OSS offers consulting services to municipalities and homeowners during the whole home renovation journey:
 - a. *information on grants, loans, or other forms of financing.*
 - b. *information about suitable and innovative EE measures, including heating/cooling systems replacement with new and more efficient RES generators.*

- c. *support citizens for the implementation of innovative EE integrated packages (installation of thermal insulation together with modernization of the heating systems and/ or RES integration).*
 - d. *consultation on how to establish a homeowner's association.*
 - e. *paperwork preparation.*
 - f. *project budgeting for home renovation.*
3. Marketing and communication activities. Through its communication activities, the OSS aims to engage as many homeowners as possible and motivate them to start a home renovation project. The OSS will act as a boosting centre for home renovation practices, so marketing and communication will be one of its primary and relevant activities.
 4. Legal and technical support to municipalities – identification and prioritising the participating buildings, support for launching public procurements (Preparation of tenders' documentation)

Channels

Four channels emerge to engage customers:

1. Information about OSS services will be published on the EAP and municipalities' websites. All citizens can access all services available. Direct communication will be performed by using social networks, where the OSS will launch marketing campaigns focused on different OSS services.
2. Phone and online consulting services - users can call by phone or book an online call with the OSS experts.
3. OSS offices. Customers can decide to book an appointment with OSS technicians to ask for information and advice about energy home renovation.
4. Publications and organization of local events – the information about the OSS and its services will be shared during social public events, dissemination of info materials- like posters, flyers, publications in local media, etc.

Customer relationships

Two types of customer relationships have been identified:

1. Self-service. Customers can acquire all information by themselves by visiting the OSS websites.
2. Personal assistance – if homeowners want, they can ask for personal help provided by OSS technicians, which will support homeowners in getting information and starting a home renovation project. Those services consist of filling out application documentation, building inspection, energy audit, etc. The assistance will be provided by phone call, online or physical meeting at the OSS office. For energy audits, onsite visits will be made.

Key partners and OSS Governance

The OSS will be a public consortium, involving EAP and the Municipalities of Vidin and Smolyan. It will be organised in the following structure:

- **Founder** – EAP (OSS founder and manager) will support the Municipalities of Vidin and Smolyan. The services provided by EAP will be free for both municipalities and citizens.
- **Management Board:** all activities will be managed and controlled by the OSS management board. The members of this board will be representatives of EAP and Smolyan and Vidin municipalities.

The OSS operational staff:

- **EAP's Team:** EAP experts will coordinate Municipalities and will be responsible for the overall activities. It entails:
 - Administrative Team
 - Technical Team
 - Legal Team
 - Communication & Marketing Team
- **Municipal Teams:** municipal experts will participate in the development of bidding/tendering procedures for the implementation of the EE measures

The **EAP** will act as manager and will support municipalities in the implementation of OSS services.

The **municipalities** will be responsible for:

- *Issuing relevant permits,*
- *Lunching public procurement for implementing EE measures,*

Key resources

Considering the OSS services and governance, the most relevant resources are:

1. Human resources: technical experts, like engineers, energy auditors, and legal and financial consultants.
2. Offices, digital resources, and technical equipment: software, website, offices, etc., where most of all OSS services are offered.
3. Economic resources. The development and launch of the OSS will be financed by a mix of public funds and co-financing from EAP and the municipal budget (staff costs for municipal members of the OSS will be covered by the municipal budget).
4. Know-how.

Costs

The costs of the OSS have been estimated in terms of qualitative costs. These refer to:

- Human resources. This represents the highest cost for the OSS. OSS employees will also manage the relationships with the network of players to maintain and reinforce the collaborations. The municipalities of Vidin and Smolyan will cover staff costs for their members in the OSS by the municipal budget- estimations are around 10.000 €/year/person. The total staff cost for the other OSS employees is around 470.000 €/year
- Website/online platform maintenance – 450 €/year.
- Marketing and communication (see channels section) – 2.900 €/year.
- Physical office and technical equipment – 21.200 €/year.

Revenue

The costs will be covered by co-financing from EAP, the municipal budget, and public funds and grants:

- EAP co- financing - 10 % of the total costs
- Municipal budget - the costs for municipal experts that participate in the OSS will be covered by the municipal budget
- National funding - 4Q 2023 - National recovery and resilience plan
- EU funding (LIFE+ program, EIB mechanism ELENA)

The OSS will apply for financing from national and EU funding. For example, the LIFE+ program (deadline for applying is November 2022), and EIB mechanism ELENA (applying can be done at any time).

3.4.1. CONNECTION TO OSS ARCHETYPES AND SUBCATEGORIES

The OSS BM draft resulting from the co-design process shows many similarities with the Cooperation subcategory within the Coordination archetype. Indeed, the Bulgarian OSS BM is based on a partnership set up by public entities which have a strong social aim. The Cooperation subcategory is set up by a combination of entities in a cooperative manner, like in the case of the Bulgarian one. The OSS BM drafted for the two Bulgarian cities aims at offering integrated services, from information and consulting, to building analysis, energy audit, paperwork preparation and design support. This can help in controlling costs and works performance, even if market players who will perform renovation works do not provide quality guarantees, and monitoring services are not provided by the OSS. The difference between the Bulgarian OSS and the Cooperation subcategory is that the first one does not offer integrated energy efficiency packages under its name, signing out a single contract with the homeowners and being responsible for the works. However, strong multilevel cooperation among public authorities and public agencies can help in boosting renovation by reducing institutional boundaries and accelerating bureaucratic procedures.

4. CONCLUSION

The analysis of the OSS initiatives running in the EU allows us to identify three OSS BM archetypes and seven subcategories. Those represent theoretical business models useful to explain different types of OSS and how they create and deliver value and interact with market players. The three OSS archetypes are the Facilitation model, the Coordination model and the Development model. The first one provides softer support to homeowners, operating only at the “orientation” phase of home renovation. It aims to facilitate the renovation process by offering easy access to information and motivating homeowners. The second one follows and supports homeowners along the whole renovation journey. It acts as a network of trusted players, offering integrated services and assuring quality guarantees. It aims to reduce market fragmentation and the gap between the demand and supply sides. The last one provides the strongest support to homeowners by offering tailor-made solutions for home renovation. It is responsible for the work execution, the provisioning of credits and the monitoring of results. It is the unique point of contact for the homeowners, providing all services needed.

Each OSS BM archetype can be further categorised into sub-categories. Three subcategories have been identified within the Facilitation model, two in the Coordination model, and two in the Development model.

Those help in figuring out which type of OSS better meet local needs and ambitions. Indeed, the three archetypes and the seven subcategories have been described to local partners in order to guide them in the definition of the OSS BM in each pilot area.

Using a collaborative online platform, a blank Business Model Canvas has been designed to support the co-creation of the OSS BMs. The canvas, following the Osterwalder et al. (2005) framework, includes 9 blocks: 1) customers, 2) value proposition, 3) channels, 4) customer relationships, 5) revenues, 6) key resources, 7) key activities, 8) key partners, and 9) costs. This approach has been used to define the OSS BM in the Padova target area.

A set of co-design workshops have been developed for Padova target area, Timisoara and Bulgarian cities.

Through the co-design workshops, OSS BMs have been drafted.

The results show that the OSS in Padova will operate at the “orientation” and “closing” phases of the home renovation journey. It will aim to facilitate information access, increase awareness and reduce the gap between demand and supply. It will provide a website and an online energy simulation platform to support homeowners in getting access to all information needed and increase their will to start a renovation project. It also offers technical consulting services, if required by homeowners, and administrative and legal support in drafting contracts with suppliers and contractors. The OSS will act as an intermediary, providing homeowners with a list of suitable market players, who belong to the OSS network. The costs for the OSS development and maintenance will be covered by public funds at the beginning, then by different types of revenue, following the evolution of the OSS itself. The OSS will also sell its know-how to other public agencies and entities that want to implement an OSS. The OSS in Padova will have three customer segments: homeowners, market players and public entities. Some communication channels have been already implemented in the area, such as the website and communication campaigns. Other channels will be added in order to reach and engage as many homeowners as possible. Indeed, a hybrid communication approach has been selected. This asks for the use of both digital and physical communication, through newspapers, local events, and a front office in a dedicated place.

Timisoara OSS BM mostly focuses on providing information to all citizens interested in increasing the energy performance of their homes, or interested in enlarging business opportunities in the case of market players. The OSS will be fully public since it is promoted and set up as a Timisoara Municipality office. Market players involved in creating a verified list of professionals and operators are not involved in the OSS directly. Those do not pay a fee to the OSS for being part of the list. OSS costs are all covered by Timisoara Municipality funds. All services are delivered for free by the Municipality which already owns key resources needed for the OSS functioning. Limitations in Romanian legislation may affect the possibility of hiring new high-skilled employees to fulfil the OSS mission. However, the OSS can start working without any external support, considering its limited services. The OSS in Timisoara strongly follows the Advisor subcategory identify in the literature. Easier access to information, also regarding public funds available and public incentives, can facilitate the home renovation process and increase awareness.

The Bulgarian OSS will be set up as a new public entity (public consortium), coming from the collaboration of EAP, Vidin and Smolyan Municipalities. It aims to facilitate the renovation process by providing easier access to transparent and high-quality information. The OSS will offer integrated services, from information to building analysis, energy audit, paperwork preparation and design support. The Municipalities are responsible to provide renovation work services for public buildings. Works execution is carried on by private companies, which are selected by homeowners. The guarantee of work quality and energy savings is not provided by the OSS. Services are provided for free by partners, and the costs are covered by public grants and funds. Since services are free of charge, the OSS does not have revenue. It can work only with the support of public funds. National financing programs and plans, like the Recovery Plan, can represent a good opportunity for the OSS. The OSS BM drafted for the two cities show some similarities with the Cooperation subcategory. The differences refer to the type of contract signed between the OSS and homeowners. In the Cooperation model, the OSS signs a unique contract and guarantees the work quality. In the Bulgarian OSS, works are performed by external actors, and the OSS only operate in the first phases of home renovation.

In the following months, these BM drafts will be further discussed among partners and with market players. Then feasibility studies will be developed to analyse the capacity of the OSS options to produce results and be feasible in the territories.

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